

REMARKS

Introduction

As a preliminary matter, claim 12 was cancelled in the Amendment dated October 14, 2008. The Office Action Summary (box 4) and page 2 of the Office Action incorrectly state that claim 12 is pending yet withdrawn. Claim 12 has been cancelled. Clarification of cancelled claim 12 is requested.

Claims 1-11 and 13-26 are pending, of which claims 1-11 and 16 are withdrawn. In response to the Office Action dated February 4, 2009, Applicants have amended claims 13, 15, 22, 25, and 26. Support for amended claim 1 is found in, for example, Para. [0030] on page 10 of the originally filed specification. Support for amended claims 15, 22, 25, and 26 is found in, for example, pg. 6, lines 4-8 and pg. 11, lines 8-11 of the originally filed specification. Claim 27 has been added. Support for new claim 27 is found in, for example, Para. [0034] on page 1 of the originally filed specification.

Care has been taken to avoid the introduction of new matter. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

Claim Objections

Claims 13 and 25 are objected to because of informalities. Specifically, the Examiner contends that the use

of "adapted to" suggests or makes optional but does not require the steps to be performed or does not limit a claim to a particular structure or does not limit the scope of a claim or claim limitation.

Applicants traverse.

The term "adapted to" is, in fact, a positive limitation in that the substance or material or step thus described must be adapted to perform the recited function, or else the material or structure or step is not contemplated by the claim. *See, In re Venezia*, 530 F2 956, 189USPQ 149 (C.C.P.A. 1976).

Accordingly, the phrase "a first and a second surface both showing electrical conductivity and *adapted to* be brought into contact with an electrolytic solution an active material layer" should be given patentable weight because it is limited to the actual invention disclosed. *See, In re Land*, 151 USPQ 621, 635-36 (C.C.P.A. 1966).

Withdrawal of the foregoing objection is respectfully requested.

Claim Rejection Under 35 U.S.C. § 112

Claims 15, 22, 25, and 26 are rejected under 35 U.S.C. § 112, second paragraph, as purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

The Examiner contends that "high" in claims 15, 22, and 25 is a relative term and it is unclear what the Applicants regard as the invention. The Examiner opines with respect to claims 25 and 26 that "high" and "low" are relative terms and it is unclear what the Applicants regard as the invention.

As a preliminary matter, claim 26 only recites "low."

Applicants respectfully submit that the rejection is moot in view of the foregoing amendment of claims 15, 22, and 25, which deleted all occurrences of "high." With respect to claims 25 and 26, "low" have been amended to recite --lower capability of forming a lithium compound--.

Withdrawal of the foregoing rejection is respectfully requested.

#### Claim Rejection Under 35 U.S.C. § 102

Claims 13, 14 and 17-26 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,051,340 to Kawakami et al. ("Kawakami").

Applicants traverse.

The Office Action asserts that Kawakami, in Figs. 4(a)-4(d) is directed towards an electrode for a secondary battery having a first and second surface both with an electrical conductivity and brought into contact with an electrolytic solution; an active material layer containing a powderly material 103 positioned between the first and second surface; and an

electrically metal layer 101 in the middle of the thickness direction where the active material is present on both sides of the conductive foil.

Turning to the cited prior art, Kawakami describes an electrically conductive metallic material. However, Kawakami fails to teach or suggest that the electrically conductive metallic material is **deposited on** the active material particles, as required by amended claim 13. Figs. 4(c) and 4(d) show an electrically conductive auxiliary 104 as part of the powderly material mixture 103. The electrically conductive auxiliary described in Kawakami is not a metallic material. The electrically conductive auxiliary is made of carbonic material, such as, carbon black, acetylene black, and graphite in a powder form (see, e.g., col. 14, lines 22 - 36). An aspect of amended claim 13 is an electrically conductive metallic material with the active material having powderly particles prevents the active material particles from falling off from the active material layer (see, e.g., Para. [0016] on page 5 of the originally filed specification).

However, the carbonic materials discussed in Kawakami only possess a characteristic of electrical conductivity. The carbonic materials cannot prevent the active material particles from falling off from the active material layer. Thus, Kawakami fails to disclose or suggest, at a minimum, "...the active material layer further contains an electrically conductive metallic

material which is deposited on the active material particles and is filled between the active material particles over the entire thickness direction of the active material layer," as recited in amended claim 13.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities," *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Kawakami does not anticipate claim 13 nor any claim dependent thereon.

Claim Rejection Under 35 U.S.C. § 103

Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawakami in view of U.S. Patent No. 5,147,739 to Beard.

The Office Action admits that Kawakami is silent towards a metallic lithium layer being provided between the conductive foil and the active material layer. The Office Action relies on Beard in an attempt to cure the admitted deficiencies of Kawakami. The Examiner contends that Beard teaches a lithium battery having an anode with a current collector 13, metallic lithium layer 14, and an active material 15 for the benefit of

providing an electrochemical cell with the full voltage available from a pure lithium anode without the problems of dendritic growth or lithium cycling loss. The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a metallic lithium layer between the conductive foil and active material layer of Kawakami because Beard teaches that this configuration provides a battery without the problems of dendritic growth or lithium cycling loss.

Although not relied upon to do so, Beard fails to disclose or suggest, at a minimum, "...the active material layer further contains an electrically conductive metallic material which is deposited on the active material particles and is filled between the active material particles over the entire thickness direction of the active material layer," as recited in amended claim 13. Thus, Beard fails to cure the deficiencies of Kawakami.

#### New Claim

New dependent claim 27, for example, recites in part, "...the active material layer has vacant spaces between the active material particles." Nothing in the cited references teaches or suggests the described subject matter. It is submitted that this new claim distinguishes over the cited references.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional  
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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